

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A container for storing or transporting spent nuclear fuel, the container comprising:

a plurality of ~~elongated~~ tubes that receive ~~receives~~ spent nuclear fuel assemblies, each tube having four sidewalls and four corners defining a rectangular cross section; and, ~~the plurality of tubes being arranged in an alternating pattern; and~~

an attachment means for attaching that attaches ~~respective pairs of a plurality of corners of the tubes to each other, together the plurality of tubes at the corners~~ at least one corner of a first one of the tubes engaging another corner of a second one of the tubes, each engaged corner of the first and second ones of the tubes being formed from an intersection of a first sidewall and a second sidewall, the first and second side walls being normal to each other, the first sidewall of the first one of the tubes being substantially aligned with the first sidewall of the second one of the tubes, and the second sidewall of the first one of the tubes being substantially aligned with the second sidewall of the second one of the tubes, so that two sidewalls of adjacent tubes are substantially aligned.

2. (Currently Amended) The container of ~~as defined in~~ claim 1, wherein the attachment means comprises a plurality of first rods; and a plurality of recesses being formed at the corners of the plurality of ~~elongated~~ tubes, wherein respective ones of the ~~the plurality of~~ first rods are being mounted in respective ones of the ~~plurality of~~ recesses of ~~one of the adjacent tubes~~ the first one of the tubes, the respective ones of the first rods engaging and engaged to respective ones of the ~~plurality of~~ recesses of ~~the other adjacent tube~~ second one of the tubes, when the two adjacent sidewalls of the adjacent tubes are substantially aligned.

3. (Currently Amended) The container of as defined in claim 2, wherein each of the first rods has an opening ~~have openings~~ and the attachment means ~~mechanism~~ further comprises at least one pin, ~~the plurality of first rods being mounted in the plurality of recesses of one of the adjacent tubes and to the plurality of recesses of the other adjacent tube, wherein the openings of at least one respective pair of the first rods mounted in respective ones of the recesses of the first and second ones of the adjacent tubes are being positioned to axially aligned, wherein the at least one pin is inserted through the openings of the at least one respective pair of the first rods. align the openings to insert the pin through the axially aligned openings of the first rods.~~

4. (Currently Amended) The container of as defined in claim 2, further comprising at least one one or more second rod ~~rods~~ being mounted in a corresponding at least one of the plurality of recesses of one of the adjacent tubes ~~the first one of the tubes, the at least one second rod and engaging a respective one of the plurality of recesses of the other adjacent tube~~ second one of the tubes when the two first side wall of the first one of the tubes is substantially aligned with the first side wall of the second one of the tubes, and the second side wall of the first one of the tubes is substantially aligned with the second side wall of the second one of the tubes. ~~adjacent sidewalls of the adjacent tubes are substantially aligned.~~

5. (Currently Amended) The container of as defined in claim 4, further comprising a first and a second set of the tubes, wherein the second rods are mounted on the tubes within the first set, ~~a first set of tubes that is mounted with the second rods and a second set of tubes that is not mounted with the second rods, wherein each of the second rods of the first set of tubes engaging a respective one of the tubes in the second set of tubes when the two adjacent sidewalls of the adjacent tubes are substantially aligned.~~

6. (Currently Amended) The container of as defined in claim 1, wherein the plurality of ~~elongated~~ tubes is arranged in the alternating pattern such that the placement of a four-tube array linked at the corners of the tubes creates a developed cell.

7. (Currently Amended) The container ~~of as defined in claim 1~~, wherein the plurality of tubes includes a plurality of flat load bearing surfaces at the corners of respective ones of the tubes, the ~~plurality of flat load bearing surfaces on the first one of the tubes of the adjacent tubes~~ engaging the plurality of flat bearing surfaces on the second one of the tubes, ~~each other when the two adjacent sidewalls of the adjacent tubes are substantially aligned.~~

8. (Currently Amended) A container for storing or transporting spent nuclear fuel, the container comprising:

a plurality of tubes that receive ~~receives~~ spent nuclear fuel ~~rods~~;

a plurality of first rods being mounted at a point where each respective one of the tubes abuts against another one of the tubes on the plurality of tubes, each of said first rods having an opening; ~~openings~~; and

at least one pin; ~~one or more pins~~;

wherein the plurality of openings of respective ones of the first rods mounted on a first one of the tubes are substantially aligned with the openings of respective ones of the first rods mounted on a second one of the tubes; and ~~is aligned so that the one or more~~

the at least one pin extends ~~pins extend~~ through the aligned ones of the openings of the ~~plurality of first rods~~, thereby linking respective ones of the tubes together.

9. (Currently Amended) The container ~~of as defined in claim 8~~, wherein the at least one pin is one or more pins ~~are welded to or otherwise captured by one of the first rods of the adjacent tubes~~.

10. (Currently Amended) The container ~~of as defined in claim 8~~, wherein the at least one pin comprises one or more pins ~~comprise~~ a head portion and a body portion, the body portion extending through the openings of the aligned ones of the first rods of adjacent tubes and the head portion resting against ~~being adjacent to one of the plurality of first rods coupled together~~.

11. (Currently Amended) The container ~~of as defined in~~ claim 8, wherein each of the ~~plurality of~~ tubes includes a plurality of recesses ~~on the plurality of tubes~~, the first rods being mounted in the recesses of respective ones of the tubes ~~one of the adjacent tube~~ and engaging the recesses of ~~the other adjacent tube~~ of other ones of the tubes when the tubes are linked together.

12. (Currently Amended) The container ~~of as defined in~~ claim 11, further comprising ~~one or more~~ at least one second ~~rod~~ rods being mounted in the recesses of respective ones of the tubes ~~one of the adjacent tubes~~ and engaging the recesses of other ones of the tubes ~~the other adjacent tube~~ when the tubes are linked together.

13. (Currently Amended) The container ~~of as defined in~~ claim 12, further comprising a first set of tubes upon which the ~~that is mounted with~~ second rods are mounted, and a second set of tubes without second rods mounted thereon, ~~that is not mounted with the second rods~~, the second rods of the first set of tubes engaging the second set of tubes when the tubes are linked together.

14. (Currently Amended) The container ~~of as defined in~~ claim 11, wherein each of the ~~plurality of~~ tubes has four sidewalls and four corners defining a rectangular cross section, the plurality of recesses being formed at the corners of the ~~plurality of tubes~~, and the first rods being mounted in the recesses of respective ones of the tubes ~~one of the adjacent tube~~ and engaging the recesses of ~~the other adjacent~~ remaining ones of the tubes when the tubes are linked together.

15. (Currently Amended) The container ~~of as defined in~~ claim 14, wherein:
the ~~plurality of~~ tubes ~~being~~ are arranged in an alternating pattern; and
the ~~plurality of~~ tubes ~~being~~ are linked together at the corners, wherein a sidewall of a first one of the tubes is in substantial alignment with a sidewall of a second one of the tubes.
~~so that two adjacent sidewalls of adjacent tubes are substantially aligned.~~

16. (Currently Amended) The container ~~of as defined in~~ claim 15, wherein the ~~plurality of tubes are~~ is arranged in the alternating pattern such that the placement of a four-tube array linked at the corners of the tubes creates a developed cell.

17. (Currently Amended) The container ~~of as defined in~~ claim 15, wherein respective ones of the plurality of tubes includes a plurality of flat load bearing surfaces, the flat load bearing surfaces being located at the corners of the tubes, the ~~plurality of flat load bearing surfaces on a respective one of the tubes of the adjacent tubes~~ engaging the flat load bearing surfaces on another one of the tubes. ~~each other when the tubes are linked together.~~

18. (Currently Amended) A container for storing spent nuclear fuel, the container comprising:

a plurality of tubes that ~~receive~~ receives spent nuclear fuel assemblies, each of the tubes having a plurality of recesses ~~and being adjacent to each other; and~~

a plurality of first rods being mounted in respective ones of the plurality of recesses; and of the tubes;

wherein at least one first rod ~~the plurality of first rods~~ mounted on a respective one of the tubes is attached to at least one of the first rods mounted on at least one second one of the tubes, thereby in the recesses of the adjacent tubes is attached to each other linking the respective one of the tubes and the at least one second one of the tubes together.

19. (Currently Amended) The container ~~of as defined in~~ claim 18, wherein each of the first rods has an opening and respective pairs of the plurality of first rods ~~are~~ is attached to each other by ~~way of axially aligning the openings of the respective pairs of the first rods and extending a pin of the adjacent tubes so that one or more pins extend through the openings of each of the respective pairs of the plurality of first rods.~~

20. (Currently Amended) The container of as defined in claim 19, wherein the pin ~~comprises one or more pins~~ comprise a head portion and a body portion, the body portion extending through the openings of each of the respective pairs of the first rods of the aligned first rods of adjacent tubes and the head portion abutting against ~~being adjacent to one of the first rods of the plurality of first rods.~~

21. (Currently Amended) The container of as defined in claim 19, wherein the pin ~~one or more pins are welded to or otherwise~~ is captured by one of the first rods ~~of the adjacent tubes.~~

22. (Currently Amended) The container of as defined in claim 18, wherein each of the plurality of tubes has four sidewalls and four corners defining a rectangular cross section, the ~~plurality of~~ recesses being formed along at least one of the one or more corners of the plurality of tubes and the ~~plurality of~~ first rods being mounted in the plurality of recesses along the at least one of the one or more corners of the plurality of tubes.

23. (Currently Amended) The container of as defined in claim 22, wherein the ~~plurality of tubes~~ are is arranged in an alternating pattern and the ~~plurality of tubes~~ are is linked together at the corners, wherein a first one of the side walls of the first one of the tubes is substantially aligned with a first one of the side walls of the second one of the tubes, and a second one of the side walls of the first one of the tubes is substantially aligned with a second one of the side walls of the second one of the tubes. so that two adjacent sidewalls of adjacent tubes are substantially aligned.

24. (Currently Amended) The container of as defined in claim 18, further comprising at least one one or more second rod rods being mounted in the recesses of respective ones of the plurality of tubes, the at least one second rod mounted in the recess of a respective ~~to one of the adjacent tubes~~ engaging the recess ~~recesses of a remaining one of the other adjacent tube tubes~~ when the tubes are linked together.

25. (Currently Amended) The container of as defined in claim 24, wherein the plurality of tubes comprises a first set of tubes and a second set of tubes, wherein the second rods are mounted in each on of the tubes in the second set of tubes. one set of tubes is mounted with the second rods and another set of tubes is not mounted with the second rods, the second rods of the first set of tubes engaging the second set of tubes when the tubes are linked together.

26. (Currently Amended) The container of as defined in claim 23, wherein the plurality of tubes is arranged in the alternating pattern such that the placement of a four-tube array linked at the corners of the tubes creates a developed cell.

27. (Currently Amended) The container of as defined in claim 22, wherein respective ones of the plurality of tubes includes a plurality of flat load bearing surfaces at the corners of the tubes, the plurality of flat load bearing surfaces on a respective one of the tubes of the adjacent tubes engaging the flat bearing surfaces on a remaining one of the tubes. each other when the tubes are linked together.

28. (Currently Amended) A container for storing or transporting spent nuclear fuel, the container comprising:

a plurality of ~~elongated~~ tubes that receive ~~receives~~ spent nuclear fuel rods, each of the tubes ~~tube~~ having four sidewalls and four corners defining a rectangular cross section, ~~the plurality of tubes being arranged in an alternating pattern;~~ each of the tubes having a plurality of recesses and a plurality of flat load bearing surfaces along at least one corner; ~~of the tubes;~~ and

a plurality of first rods being mounted in the ~~plurality of recesses of the~~ at one or more corners of the plurality of tubes, wherein respective pairs of the plurality of first rods mounted are attached to each other, thereby ~~on the adjacent tubes being attached to the each other~~ linking the tubes together; and

wherein the ~~plurality of the tubes are~~ is linked to each other at the corners such that the ~~plurality of flat load bearing surfaces on respective pairs of the tubes abut against each other.~~ of the adjacent tubes engages each other and two or more adjacent sidewalls of the adjacent tubes are substantially aligned.

29. (Currently Amended) The container of as defined in ~~claim 28~~, wherein each of the first rods includes having an opening, wherein the openings of respective pairs of the plurality of first rods of the adjacent ones of the tubes are being aligned so that a pin may be extended ~~one or more pins extend therethrough, thereby through the openings of the plurality of first rods~~ attaching the respective pairs of the first rods together.

30. (Currently Amended) The container of as defined in ~~claim 29~~, wherein the one or more pins comprise a head portion and a body portion, the body portion extending through the openings of the aligned first rods of adjacent tubes and the head portion being adjacent to one first rod of the plurality of first rods.

31. (Currently Amended) The container of as defined in claim 28, further comprising at least one second rod ~~one or more second rods~~ being mounted in the ~~plurality of~~ recesses of a respective one of the adjacent tubes and engaging the ~~plurality of~~ recesses of the other an adjacent one of the tubes ~~tube~~ when the tubes are linked together.

32. (Currently Amended) The container of as defined in claim 31, ~~wherein~~ further comprising a first set of the tubes and a second set of the tubes, wherein the second rods are mounted in each one of the first set of tubes. ~~one set of tubes is mounted with the second rods and another set of tubes is not mounted with the second rods, the second rods of the first set of tubes engaging the second set of tubes when the tubes are linked together.~~

33. (Currently Amended) The container of as defined in claim 28, wherein the plurality of tubes is arranged in the alternating pattern such that the placement of a four-tube array linked at the corners of the tubes creates a developed cell.

34. (Currently Amended) The container of as defined in claim 29, wherein the pin is ~~one or more pins are welded to or otherwise captured by one of the first rods, of the adjacent tubes.~~

35-47. (Canceled)

48. (New) An apparatus for the storage and transport of spent nuclear fuel, comprising:

- an array of tubes;
- a container, wherein the array of tubes are disposed in the container and the array of tubes contacts at least one side wall of the container;
- a plurality of couplings between adjacent pairs of the tubes, wherein each of the couplings comprises:
 - a first rod disposed on a first one of the tubes;
 - a second rod attached to a second one of the tubes;
 - the first and second rods each having an opening along a length of the first and second rods; and
 - a pin extending through the openings of the first and second rods; and
- wherein a horizontal bearing load applied to the array of tubes is transferred through the tubes and the couplings to the at least one side wall of the container.

49. (New) The apparatus of claim 48, wherein each of the tubes further comprises a plurality of side walls, wherein at least one of the side walls of a respective one of the tubes is substantially aligned with a side wall of a second one of the tubes.

50. (New) The apparatus of claim 48, wherein each of the tubes in the adjacent pairs of tubes further comprise at least two side walls joined along a corner, and, a flat bearing surface disposed in at least a portion of the corner, wherein for each of the adjacent pairs of tubes, a first one of the flat bearing surfaces contacts a second one of the flat bearing surfaces.

51. (New) The apparatus of claim 48, further comprising at least one solid rod disposed between the adjacent pairs of the tubes.

52. (New) The apparatus of claim 48, wherein the first and second rods are disposed in recesses formed in the outer surfaces of the tubes.

53. (New) The apparatus of claim 52, wherein the first and second rods are welded into the recesses.

54. (New) The apparatus of claim 52, wherein the recesses are formed in a plurality of corners in the outer surfaces of the tubes.

55. (New) The apparatus of claim 52, wherein the pin extending through the openings of the first and second rods is rigidly attached to at least one of the first and second rods.

56. (New) The apparatus of claim 55, wherein the pin is rigidly attached to at least one of the first and second rods by a weld, wherein the weld is positioned so as not to be subject to the horizontal bearing load.

57. (New) The apparatus of claim 48, wherein a cross sectional shape of the tubes is selected from the group consisting of a square, a rectangle, a circle, a triangle, a hexagon, a heptagon, and an octagon.

58. (New) The apparatus of claim 48, wherein the array of tubes forms a cell, wherein the tubes are arranged in an alternating pattern in the cell.